This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1. (amended) A magneto-optical imaging method comprising:
- positioning, close to a target material [(2)], a substantially plane face of a magnetic active material [(15)] suitable for producing a Faraday rotation in a polarized light beam,
- generating an exciting magnetic field of angular frequency ω in the target material [(2)],
- directing a polarized incident light beam, through the active material [(15)], toward the target material [(2)],
- detecting, using photodetector means [(7)], a reflected beam corresponding to the reflection on a reflecting surface located between the active material [(15)] and the target material [(2)], and
- observing the angle of Faraday rotation in the reflected beam, with respect to the incident beam, which is created in the active material [(15)] by an interfering magnetic field produced by the target material [(2)],

[characterized in that] wherein:

- the Faraday rotation of the active material [(15)] is substantially proportional to its magnetization when it is subjected to an interfering magnetic field, perpendicular to said face and varying in a minimum range extending between substantially -1 Oersted and substantially +1 Oersted, and [that]

- the value of the magnetization of the active material [(15)], under the effect of the interfering magnetic field, is determined based on the value of the angle of the Faraday rotation.
- 2. (amended) The method according to claim 1, wherein the exciting magnetic field is generated by means of an inductor [(17)] energized with a variable exciting current.
- 3. (initial) The method according to claim 2, comprising a measurement, using lockin detection, of the variation of the phase of the interfering magnetic field with respect to that of the exciting current.
- 4. (amended) The method according to [one of the preceding claims] <u>claim 1</u>, wherein the amplitude of the interfering magnetic field is measured based on the luminous intensity of the reflected beam.
- 5. (amended) The method according to [one of the preceding claims] <u>claim 1</u>, wherein the incident beam is amplitude-modulated at the same frequency as that of the exciting field.
- 6. (amended) A magneto-optical imaging device, for forming an image of a target material [(2)], said device comprising:
- an active material [(15)], comprising a substantially planar face, which is magnetic and suitable for producing a Faraday rotation in a polarized light beam,
- means for generating an exciting magnetic field [(5)] with angular frequency ω in the active material [(15)] and in the target material [(2)], when the imaging device is located close to this target material,

- a light source [(9)] for directing a polarized incident light beam, through the active material [(15)], toward the target material [(2)] when the imaging device is positioned close to this target material [(2)],
- photodetector means [(7)], for detecting a reflected beam corresponding to the reflection, after passage through the active material [(15)], of the incident beam on a reflecting surface,

[characterized in that] wherein the Faraday rotation of the active material is substantially proportional to its magnetization when it is subjected to an interfering magnetic field produced by the target material [(2)], perpendicular to said face and varying in a minimum range extending between substantially -1 Oersted and substantially +1 Oersted.

- 7. (amended) The device according to claim 6, comprising:
- an inductor [(17)] energized with a variable exciting current, for generating the exciting magnetic field, and
- modulation means of the incident beam for amplitude-modulating the latter at the same frequency as that of the exciting field.
- 8. (amended) The device according to [claims 6 and] <u>claim</u> 7, comprising calculation means for determining, based on the value of the angle of the Faraday rotation, the value of the magnetization of the active material] [(15)] under the effect of an interfering magnetic field produced in the active material [(15)] by the target material [(2)], when the imaging device is positioned close to this target material [(2)].